1
00:00:09,799 --> 00:00:07,160
5 4 3 2 1 ignition and liftoff of

2
00:00:11,870 --> 00:00:09,809
discovery and the Ulysses spacecraft

3
00:00:15,110 --> 00:00:11,880
bound for the polar regions of the Sun

4
00:00:20,150 --> 00:00:15,120
it was a dawn lunch and it was quite

5
00:00:23,330 --> 00:00:20,160
spectacular ISA built the spacecraft the

6
00:00:29,929 --> 00:00:23,340
operations have been performed jointly

7
00:00:36,069 --> 00:00:29,939
by both an ISA team and JPL team working

8
00:00:41,060 --> 00:00:36,079
at JPL The Sun has a big effect on space

9
00:00:43,779 --> 00:00:41,070
including earth and it's our star that's

10
00:00:47,690 --> 00:00:43,789
nearest to us Ulysses is a mission that

11
00:00:50,750 --> 00:00:47,700
is very unique in that it's exploring

12
00:00:52,700 --> 00:00:50,760
the sun's atmosphere at all latitudes be

13
00:00:55,910 --> 00:00:52,710

very important to see what's going on in

14
00:01:00,920 --> 00:00:55,920
the third dimension and in particularly

15
00:01:03,619 --> 00:01:00,930
over the poles of the Sun we've learned

16
00:01:05,600 --> 00:01:03,629
about the sun's magnetic field how it

17
00:01:08,630 --> 00:01:05,610
influences the origin of the solar wind

18
00:01:10,760 --> 00:01:08,640
and its subsequent evolution we've

19
00:01:14,179 --> 00:01:10,770
learned about how the Sun accelerates

20
00:01:17,570 --> 00:01:14,189
particles we were able to see that those

21
00:01:21,740 --> 00:01:17,580
particles are able to essentially access

22
00:01:23,600 --> 00:01:21,750
all regions surrounding the Sun in a way

23
00:01:25,880 --> 00:01:23,610
in which it creates this heliosphere and

24
00:01:29,480 --> 00:01:25,890
interacts with interstellar matter

25
00:01:36,319 --> 00:01:32,530
some of the discoveries that we really

26
00:01:40,940 --> 00:01:36,329
didn't anticipate one of them was the

27
00:01:43,580 --> 00:01:40,950
comet tails we were quite surprised we

28
00:01:47,539 --> 00:01:43,590
knew that there was a huge comment out

29
00:01:51,230 --> 00:01:47,549
there called ukitake and we did include

30
00:01:52,789 --> 00:01:51,240
anywhere near that comet but hope to our

31
00:01:54,770 --> 00:01:52,799
great surprise we had a passing through

32
00:01:58,399 --> 00:01:54,780
the tail the comet but nobody

33
00:02:02,149 --> 00:01:58,409
anticipated how long they could be they

34
00:02:04,730 --> 00:02:02,159
stretched from out further than the

35
00:02:06,949 --> 00:02:04,740
distance for sun to the earth and that

36
00:02:12,309 --> 00:02:06,959
was why we were able to pass through the

37
00:02:15,500 --> 00:02:12,319
tail he listens was definitely worth it

38
00:02:17,750 --> 00:02:15,510

it was a small spacecraft it was a very

39
00:02:21,039 --> 00:02:17,760
inexpensive mission I had a small

40
00:02:24,140 --> 00:02:21,049
operating team and had returned

41
00:02:27,680 --> 00:02:24,150
tremendous amount of data new

42
00:02:29,660 --> 00:02:27,690
discoveries of the Sun in heliosphere

43
00:02:31,130 --> 00:02:29,670
things that never would have been known

44
00:02:33,530 --> 00:02:31,140
that we'd not flown a mission like

45
00:02:36,560 --> 00:02:33,540
Ulysses over the poles of the Sun given

46
00:02:40,520 --> 00:02:36,570
that the scientific data that has been

47
00:02:44,060 --> 00:02:40,530
returned from ulysses over the course of

48
00:02:49,849 --> 00:02:44,070
the mission is going to be used for

49
00:02:52,550 --> 00:02:49,859
decades to come it is also a moment of

50
00:02:54,800 --> 00:02:52,560
great pride for all of the team so I was

51
00:02:58,640 --> 00:02:54,810
the first person to be assigned to the

52
00:03:01,340 --> 00:02:58,650
mission from by NASA and by JPL and I've

53
00:03:05,150 --> 00:03:01,350
been with this whole time and so it's

54
00:03:07,280 --> 00:03:05,160
been 30 years big part of my career I've

55
00:03:11,620 --> 00:03:07,290
been doing other things as well but this

56
00:03:15,830 --> 00:03:11,630
has been an exceptional opportunity and

57
00:03:17,900 --> 00:03:15,840
my plan is to continue on until the end

58
00:03:19,910 --> 00:03:17,910
of the mission and I expect to be the